2005 Annual Drinking Water Quality Report for the Town of Smithfield

This Annual Drinking Water Quality Report for calendar year 2005 is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have any questions about this report, want information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact: Mr. Peter M. Stephenson, Town Manager at 757-365-4200.

The times and location of regularly scheduled Town Council meetings are the 1st Tuesday of each month at 7:30 p.m. at The Smithfield Center located at 220 North Church Street, Smithfield, Virginia.

This annual "Consumer Confidence Report", required by the Safe Drinking Water Act (SDWA), explains where your water comes from, what testing shows about it, and other things you should know about your drinking water. We are committed to ensuring the quality of your water. Our constant goal is to provide you and your family with a safe and dependable supply of drinking water.

Mr. Jeff Smith serves as the Licensed Waterworks Operator for the Town of Smithfield, and Mr. Russell Batten is the Superintendent of Public Utilities.

Comments from the Town Manager

Please be reminded that the Town of Smithfield entered into a Consent Order with the Virginia Department of Health in 2004 for an agreed upon plan of action to reduce the naturally occurring levels of fluoride found in our public water system's deep wells. The town contracted with the engineering firm of Buchart Horn, Inc. of Baltimore, Maryland to find an appropriate fluoride removal solution. Upon the completion of their Preliminary Engineering Report, Buchart Horn, Inc. recommended that the town construct a Reverse Osmosis membrane technology Water Treatment Plant.

The VDH has concurred with our engineer's recommendations and the town proceeded to drill a new production well in 2005.A 30% design submittal of the new water treatment plant specifications and site plan was provided to VDH in March 2006 and the Planning Commission held a public hearing on the required Special Use Permit for the plant in April and recommended approval to the Town Council for another public hearing and consideration in May. Subsequently final plans and specifications will be prepared for state approval prior to project construction bidding which will likely take place in the Fall of 2006.

Once a construction contract is awarded it is estimated it will be another 12 to 18 months before the new treatment plant is fully operational. In the meantime, the town will continue sending our customers and consumers under separate cover a fluoride level violation notice each quarter when required.

Other system improvements that will be required include a new water storage tank to be located along the Battery Park Road corridor. Additional "looping" projects are under construction and planned to improve water pressure and fire flow throughout the system. As a result the town's utility rate structure was amended in 2005 and the town has issued a general obligation bond in order to pay for these required improvements.

The town has also begun the process of upgrading our water withdrawal permit from the Virginia Department of Environmental Quality. Our current permit runs through 2006 and must be renewed, but now must also be increased as a result of the water treatment process and to reflect projected growth over the next ten years. Lastly, the town will soon be adopting formal water conservation policies that will be required under the new permit.

General Information:

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

- **inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

- **pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses;

- **organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems;

- **radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

All drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline** (800-426-4791).

Source(s) and Treatment of Your Drinking Water:

The source of your drinking water is groundwater from drilled wells located in the Town. The water currently does not receive any treatment.

VDH conducted a Source Water Assessment of the Town of Smithfield Waterworks in 2002. The wells were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consist of maps showing the Source Water Assessment area, an inventory of known Land Use Activities and Potential Conduits to Groundwater, utilized at Land Use Activity sites in Zone 1 and documentation of any known contamination within the last five years, Susceptibility Explanation Chart, and Definitions of Key Terms. The report is available by contacting your waterworks system owner/operator at the phone number or address included in this report.

Definitions:

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table page 6 shows the results of our monitoring for calendar year 2005. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

Non-detects (ND) – lab analysis indicates that the contaminant is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) – one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Picocuries per liter (pCi/L) – picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) – nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

Action Level – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) – a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level, or MCL - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum contaminant Level Goal, or MCLG – the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Some people who drink water containing fluoride in excess of the MCL for many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth. Fluoride in children's drinking water at levels of approximately 1 ppm reduces the number of dental cavities. However, some children exposed to levels of fluoride greater than about 2.0 ppm may develop dental fluorosis.

Dental fluorosis in its moderate and severe forms is a brown staining and/or pitting of the permanent teeth. Because dental fluorosis occurs only when developing teeth (before they erupt from the gums) are exposed to elevated fluoride levels, households without children are not expected to be affected by this level of fluoride. Families with children under the age of nine are encouraged to seek other sources of drinking water for their children to avoid the possibility of staining and pitting.

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

Most of the results in the table are from testing done in 2005. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

In developing standards, the EPA assumes that the average adult drinks 2 liters of water each day throughout a 70 year life span. In developing these standards EPA generally MCL's are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

Violation Information:

This system received quarterly violation notices in 2005 for exceeding the PMCL for fluoride.

This Drinking Water Quality Report was prepared by:

Mr. Peter M. Stephenson, Town Manager
Town of Smithfield, P.O. Box 246, Smithfield, Virginia 23431

Contaminant (Unit of Measurement)	MCLG	MCL	Level Found	Range	Violation	Date of Sample	Typical Source of Contamination
Fluoride	4 ppm	4 ppm	4.7 ppm	3.5-4.1 pm	Yes	1st quarter 2005	Naturally occurring
Copper	0 ppb	1300 ppb AL	25 ppb	ND-187 ppb	NO	09/13/05	Erosion of pipes in the distribution system
Lead	0 ppb	15 ppb AL	2.5 ppb	ND-13.2 ppb	NO	09/13/05	Erosion of pipes in the distribution system
Radium 228	0	5 pCi/l	0.6 pCi/l	0.1-0.6 pCi/l	NO	10/26/03	Naturally occurring
Gross alpha	0	15 pCi/l	0.8 pCi/l	0.2-0.8 pCi/l	NO	10/26/03	Naturally occurring
Gross beta	4 mrem/year	50 pCi/l*	5.6 pCi/l	3.1-5.6 pCi/l	NO	10/26/03	Naturally occurring
* The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta articles.							

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for the Town of Smithfield Waterworks

Our water system violated a drinking water monitoring requirement. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the third quarter of 2004 and the second quarter of 2005, we did not collect fluoride samples. We are required to collect five fluoride samples each quarter.

What should I do?

There is nothing you need to do at this time.

What is being done?

We are increasing our efforts to ensure that samples are submitted to the laboratory on time. Subsequent fluoride samples have been collected each quarter as required.

For more information, please contact the Town of Smithfield at (757) 365-4200.

Please share this information with all other people who drink this water especially those who may not have received this notice already (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the Town of Smithfield**.**

Town of Smithfield
P.O. Box 246
Smithfield, VA 23431